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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/521,161

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EXAMINER

NGUYEN, HUY TRAM

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/521,161	Applicant(s) LEFFER, HANS GEORG	
	Examiner HUY-TRAM NGUYEN	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>January 3, 2005 and October 11, 2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-7, 9-11 and 13-14 are rejected under 35 U.S.C. 102(b) as being anticipated by **Lorentzen et al. (US Patent No. 5,520,890)**.

Regarding Claim 1, Lorentzen et al. reference discloses a reactor system suitable for carrying out chemical reactions, comprising one or more common reactant feed lines; fed into two or more single unit operated reactor sections (**Figure 1& 2, numerals 19, 29 – gas inlets and 13 - tubes**) and having one or more common product discharge lines (**Figure 1, numerals 25 and 26**), wherein each reactor section comprises in an individual reactor (**Column 5, Lines 56-60 – tube (13) defines a reaction zone**).

Regarding Claim 2, Lorentzen et al. reference discloses the reactor system of claim 1, comprising between 3 and 8 single unit operated reactor sections (**Figure 1**).

Regarding Claim 3, Lorentzen et al. reference discloses the reactor system of claim 1, in which each reactor section comprises one or more catalyst beds (**Column 1, Lines 66-67 – multi-phase catalytic reactor**).

Regarding Claim 4, Lorentzen et al. reference discloses the reactor system of claim 1, in which each of the reactor sections comprises an indirect heat exchange

system, which heat exchange systems are jointly operated (**Figure 1, numerals 17, 27 and 28 and Column 5, Lines 43-44**).

Regarding Claim 5, Lorentzen et al. reference discloses the reactor system of claims 1 comprising one common gas reactant feed line (**Figure 1 and 2, numeral 29 and Column 5, Lines 45-46**).

Regarding Claim 6, Lorentzen et al. reference discloses the reactor system of claims 1 comprising one common gas product discharge line (**Figure 1, numeral 25**).

Regarding Claim 7, Lorentzen et al. reference discloses the reactor system of claims 1 comprising one common liquid reactant discharge line or which system comprises one common liquid product discharge line (**Figure 1, numeral 25 and Figure 1 and 2, numeral 29 and Column 5, Lines 45-46**).

Regarding Claim 9, Lorentzen et al. reference discloses a process for the preparation of hydrocarbons by reaction of carbon monoxide and hydrogen in the presence of a catalyst at elevated temperature and pressure (**Column 1, Lines 6-16 – Fischer-Tropsch type of synthesis**), wherein the process is performed in a reactor system comprising one or more common reactant feed lines fed into two or more single unit operated reactor sections having one or more common product discharge lines, wherein each reactor section comprises an individual reactor (**Figure 1& 2, numerals 19, 29 – gas inlets and 13 – tubes, 25 and 26 and Column 5, Lines 56-60 – tube (13) defines a reaction zone**).

Regarding Claim 10, Lorentzen et al. reference discloses the reactor system of claim 1 comprising four single unit operated reactor sections (**Figure 1**).

Regarding Claim 11, Lorentzen et al. reference discloses the reactor system of claim 1, wherein each reactor section comprises a multitubular fixed bed catalyst arrangement **(Column 1, Lines 66-67 – multi-phase catalytic reactor)**.

Regarding Claim 13, Lorentzen et al. reference discloses the reactor system of claim 1 comprising one common liquid product discharge line **(Figure 1, numeral 25)**.

Regarding Claim 14, Lorentzen et al. reference discloses the process of claim 9, wherein the catalyst comprises a cobalt catalyst **(Column 7, Lines 44-47 – catalyst described in U.S. Pat. No. 4,801,573 includes cobalt in catalytically active amounts - Abstract of US Pat No. 4,801,573)**.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Lorentzen et al. (US Patent No. 5,520,890) in view of Cachera (US Patent No. 3,968,653).**

Regarding Claim 12, Lorentzen et al. reference discloses the reactor system of claim 4 except for the heat exchange system comprises a thermosiphon system. Cachera reference discloses a heat exchanger with a thermosiphon system (**Column 1, Lines 62-68**). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the thermosiphon heat exchange system as taught by Cachera, since Cachera reference states at **Column 1, Line 62-68** that such a modification would provide a fair degree of reliance on natural circulation of the primary cooling medium by thermosiphon.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUY-TRAM NGUYEN whose telephone number is (571)270-3167. The examiner can normally be reached on MON- THURS: 6:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1797

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HTN
3/20/08

/Walter D. Griffin/
Supervisory Patent Examiner, Art Unit 1797